Operationalizing Plant Traits

Jens Kattge [‡, §]

‡ Max Planck Institute for Biogeochemistry, Jena, Germany
§ German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig, Leipzig, Germany

Abstract

Plant traits – the morphological, anatomical, physiological, biochemical and phenological characteristics of plants and their organs – determine how primary producers respond to environmental factors, affect other trophic levels, influence ecosystem processes and services and provide a link from species richness to ecosystem functional diversity. Trait data thus represent the raw material for a wide range of research from evolutionary biology, community and functional ecology to biogeography. The importance of these topics dictates the urgent need for more and better data and improved data availability and applicability, however, producing larger datasets that allow for more powerful, synthetic analyses increasingly relies on the integration of small, focused studies. Operationalizing plant functional traits has therefore been identified a key issue in plant and vegetation ecology.

In 2007 the International Geosphere Bbiosphere Program (IGBP) and DIVERSITAS (together now Future Earth) initiated a global database of plant traits to make the data available for trait-based approaches in ecology and vegetation modelling. This was the start of the TRY initiative (https://www.try-db.org).

In 2019 the TRY database contains about 12 million trait records for more than 300,000 plant taxa and 2000 traits. The data are publicly available under a CC BY license and so far contributed to more than 200 scientific publications.

Based on experience in this bottom-up exercise, my presentation will provide a subjective view on what has been essential to make progress towards operationalizing plant traits and how far the plant trait community has progressed.

Keywords

TRY plant trait database, plant traits, framework ontology, data model, data integration, open access

Presenting author

Jens Kattge

Presented at

Biodiversity_Next 2019